`FTPMAN` Implementation Notes

for Linac Local Stations

May 1, 1991

Accelerator data requests are supported by network tasks known by the RAD50 names `RETDAT` and `SETDAT`. Data requests for plotting, however, are supported by another network task called `FTPMAN`. Console plotting of Linac data at 15 Hz is not possible without support for `FTPMAN`. This note sketches what is required to provide this support for the Linac local stations, which act as front ends to the accelerator Vax consoles. These notes are derived from Jim Smedinghoff's ACNET Design Note No. 49.4 dated March 29, 1988.
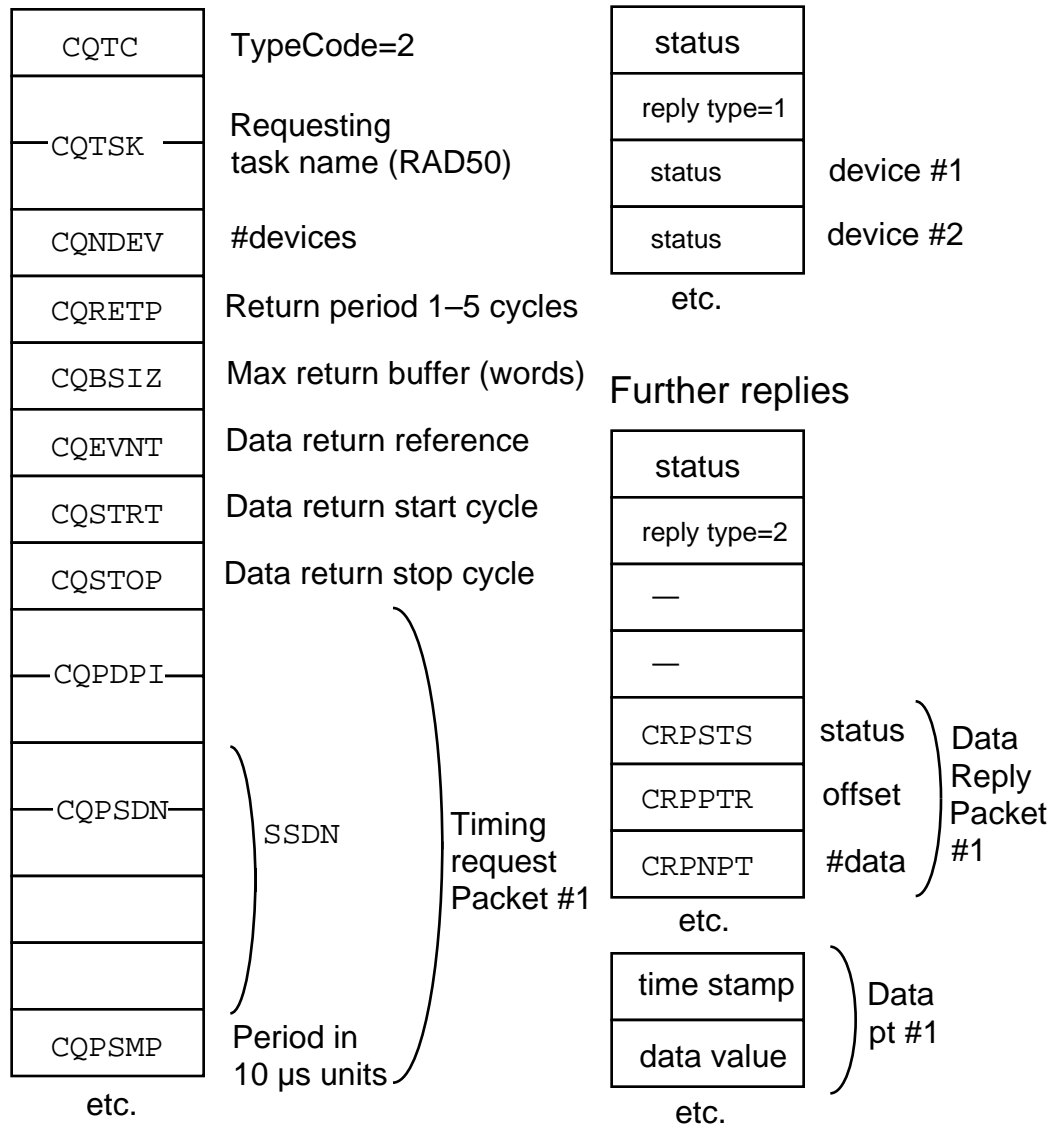
Two types of plotting protocols are supported via `FTPMAN`, continuous plots and snapshot plots. Plotting 15 Hz data only requires the continuous type.

Activation of plotting requests are done in two stages. The first requests Plot Timing Information, and the second requests the plot data. The first word of the request message is a typecode which distinguishes the request types.
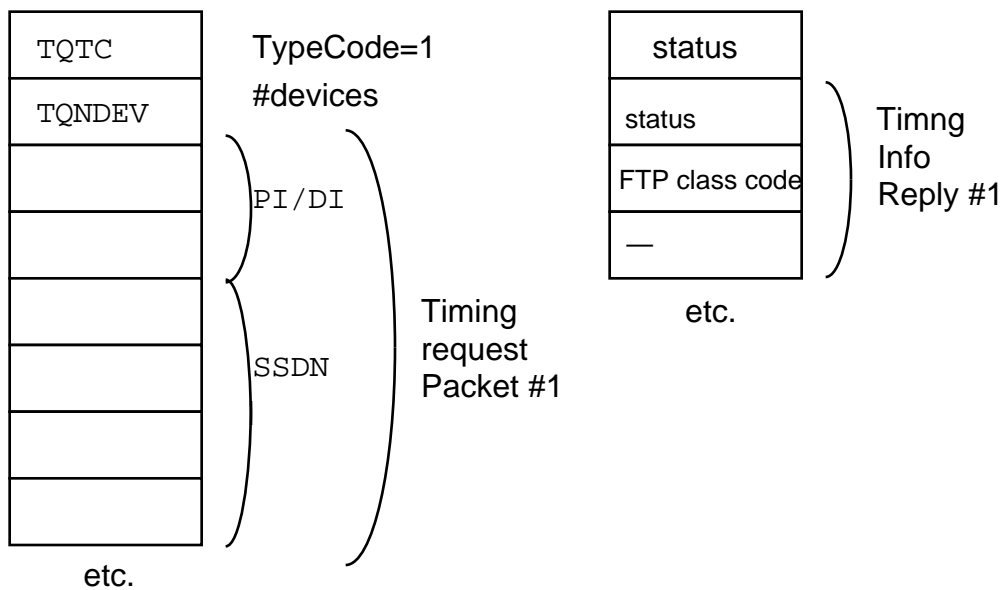
The Linac 15 Hz class code is 5. The #devices in the request is the number of timing request packets. Nothing needs to be remembered about this request for timing info.

To initialize a continuous plot, the protocol looks as follows:

Request Continuous Plot

CQTC	TypeCode=2
CQTSK	Requesting task name (RAD50)
CQNDEV	#devices
CQRETP	Return period 1–5 cycles
CQBSIZ	Max return buffer (words)
CQEVNT	Data return reference
CQSTRT	Data return start cycle
CQSTOP	Data return stop cycle
CQPDPI	
CQPSDN	SSDN
CQPSMP	Period in 10 µs units

SSDN

Timing request Packet #1

etc.

First reply

status
reply type=1
status — device #1
status — device #2

etc.

Further replies

status	
reply type=2	
—	
—	
CRPSTS	status
CRPPTR	offset
CRPNPT	#data

Data Reply Packet #1

etc.

time stamp
data value

Data pt #1

etc.

The requesting task name is used to automatically cancel any previously active FTPMAN requests from a given task in a given node. Only one request can be outstanding from a requesting task. The return period can be from one to five 15 Hz cycles, resulting in a frequency of 15 Hz to 3 Hz, respectively. The maximum data return buffer size is influenced by the requester's ability to keep up with the returned data frames. The data return reference word selects clock events to use for sampling the data to be plotted. It will likely be 0, indicating no events (always return data). The start and stop cycle counts require the ability of the front end for noticing clock event #2. The time stamps, in 100 µ s units, also require this ability.